



Natural Heritage & Endangered Species Program

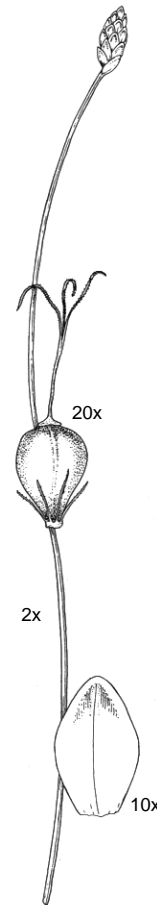
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Tiny-fruited Spike-rush or Spike-sedge *Eleocharis microcarpa* Torr. var. *filiculmis* Torr.

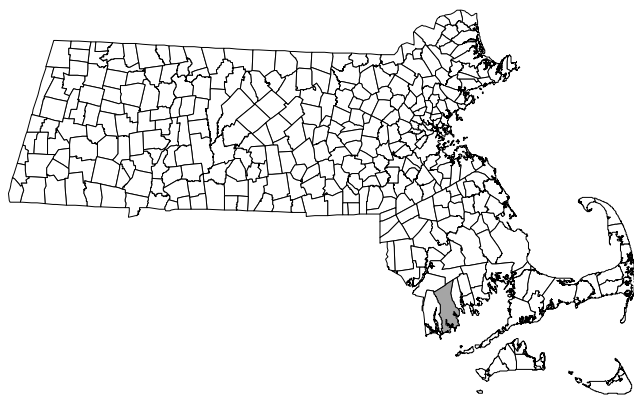
State Status: **Endangered**
Federal Status: None

Description: The tiny-fruited spike-rush (*Eleocharis microcarpa* var. *filiculmis*) is a small (up to 1 foot tall or about 3 dm), densely clustered, annual herb with slender, threadlike stems. Although the tiny-fruited spike-rush and the other spike-rushes do superficially resemble the group of plants called “rushes,” they do not belong to the Rush Family, and are actually members of the Sedge Family (Cyperaceae). The spike-rushes have a single, tight cluster of inconspicuous flowers (a “spike”) at the apex of each stem. The stems of spike-rushes appear leafless, and in fact these plants do not have leaf blades (the expanded part of the leaf), only leaf sheaths (the part which surrounds the stem). Some stems of the tiny-fruited spike rush are erect, and others arch. This species is able to reproduce vegetatively when flowers on arching stems are replaced by vegetative propagules called “bulbils.”

Aids to Identification: To positively identify the tiny-fruited spike rush and other spike-rushes (genus *Eleocharis*), a technical manual should be consulted. It is usually necessary to look at the tiny fruits of the plant under magnification to distinguish the species of spike-rush. Members of this genus possess a type of fruit called an “achene,” which is hard and nut-like and does not split



Holmgren, Noel H. The Illustrated Companion to Gleason and Cronquist's Manual. NY Botanical Garden. 1998.



Distribution in Massachusetts
1980-2006

Based on Records in Natural Heritage Database

open to release its seed. Achenes in the spike-rushes are topped by a protuberance (called a “tubercle”), which varies in shape, size, and texture among species. The tiny-fruited spike-rush is named for its minute achene, which is only 0.6 to 0.8 mm wide. It is three-sided, and is pearly white at maturity in mid-summer. In contrast, most spike-rush achenes are brown, yellow, or green. The surface of the tiny-fruited spike-rush's achene appears smooth under a hand lens or microscope. The tubercle is quite small in comparison to the achene, and resembles a tiny cap.

Similar species: There are several common spike-rushes that could be confused with the tiny-fruited spike-rush. The soft-stemmed spike rush (*Eleocharis obtusa*), which sometimes occurs with the tiny-fruited spike-rush in Massachusetts, is another tufted annual that differs in having a lens-shaped achene (instead of triangular) and in its more robust appearance. Its stems are usually taller and thicker than the delicate, thread-like stems of the tiny-fruited spike-rush. Another associated species, the tubercled spike-rush (*Eleocharis tuberculosa*), has flattened stems and a tubercle that is much larger than that of the tiny-fruited spike-rush; in fact, in the tubercled spike rush, the tubercle is as large as the achene. A common spike-rush with very slender stems that also forms dense tufts is the needle spike-rush (*Eleocharis acicularis*). It is distinguished from the tiny-fruited spike-rush by its diminutive stature (only up to 1.2 dm tall, at most), and its long, gray, ornamented achene that is roundish in cross-section, rather than strongly triangular. The slender spike-rush (*Eleocharis tenuis*), is thin-stemmed, but the stems are usually 4-8 angled (instead of round) and are usually scattered or only loosely clustered. In addition, the achenes of the slender spike-rush are rough or pitted in appearance when observed under a hand-lens.

Habitat: The tiny-fruited spike rush can be found growing in open, acidic, often sandy, seasonally wet areas of the coastal plain. It appears to be disturbance-adapted, and is found in Massachusetts in abandoned sandpits. Other plants it is known to occur with include the tubercled spike-rush (*Eleocharis tuberculosa*), the soft-stemmed spike-rush (*Eleocharis obtusa*), Plymouth gentian (*Sabatia kennedyana*), pondshore rush (*Juncus pelocarpus*), slender-leaved goldenrod (*Euthamia tenuifolia*), and threeway sedge (*Dulichium arundinaceum*).

Range: The tiny-fruited spike-rush is known to occur primarily along the Coastal Plain from Massachusetts south to Florida, and west to Texas, Indiana and Tennessee.

Population Status in Massachusetts: This species is considered to be rare throughout New England. It reaches the northern extent of its range in Bristol County, Massachusetts. The tiny-fruited spike-rush is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors.

Management Recommendations: As for many rare species, exact needs for management of tiny-fruited spike-rush are not known. The following comments are based primarily on observations of populations in Massachusetts. Because this spike-rush is found in human-created habitats, it presents an interesting management challenge. It is adapted to thrive in condition of disturbed soil, yet too much disturbance, such as through extensive ORV use of the habitat, could be detrimental to large numbers of existing plants. Because of its annual, ruderal nature, it is expected that this species will colonize nearby, newly-created disturbances over time. To maintain the tiny-fruited spikerush in existing locations, succession should be halted and soil exposed to encourage germination of the achenes of this annual species.

Mature Fruit Present

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Updated: October 2006